Quartz Composer
Advances in Snow Leopard

Session 306

These are confidential sessions—please refrain from streaming, blogging, or taking pictures.

Quartz Composer Advances in Snow Leopard

Alessandro Sabatelli
Technical Artist
Troy Koelling
Engineer

Quartz Composer Advances

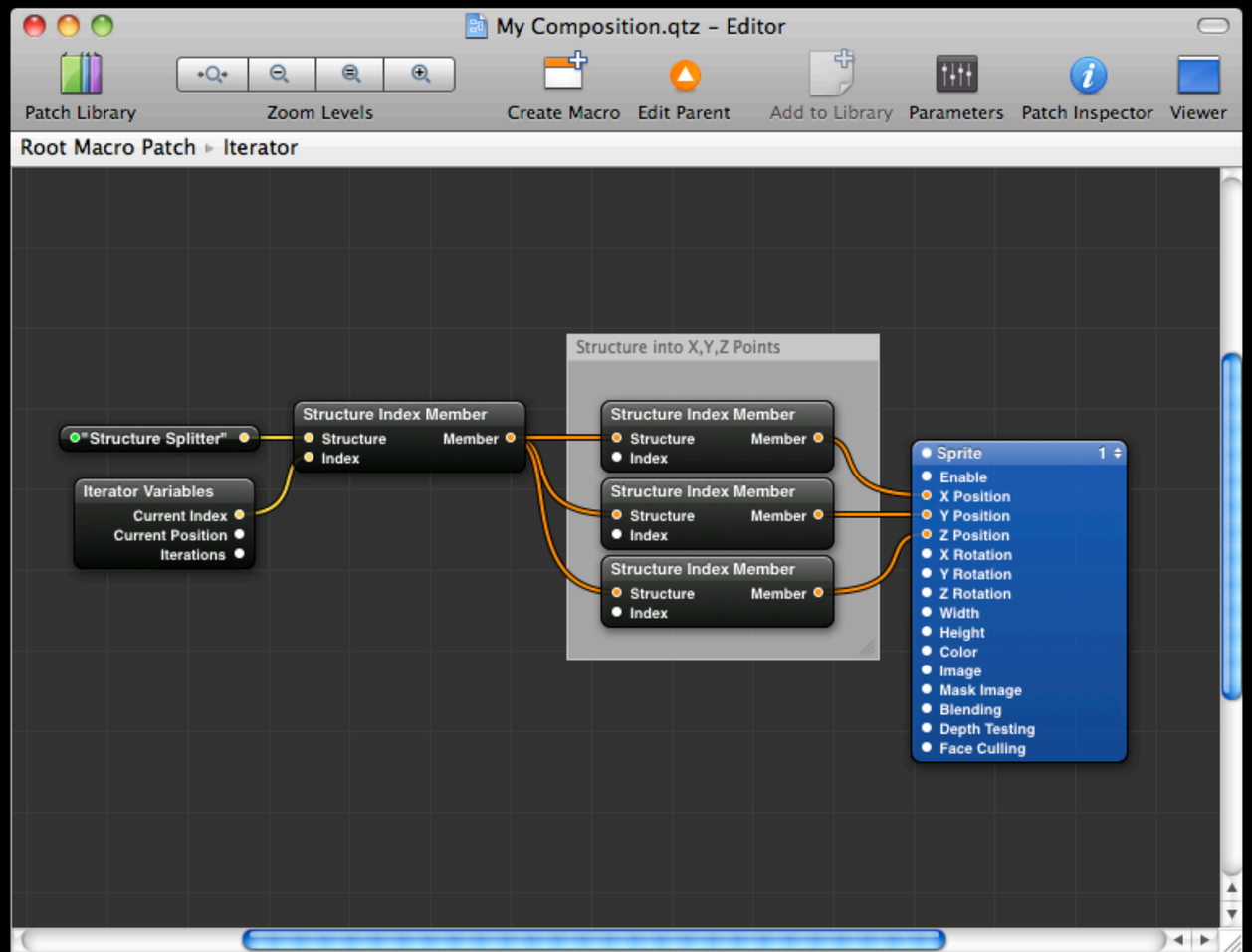
- Tiger
- Leopard
- Snow Leopard

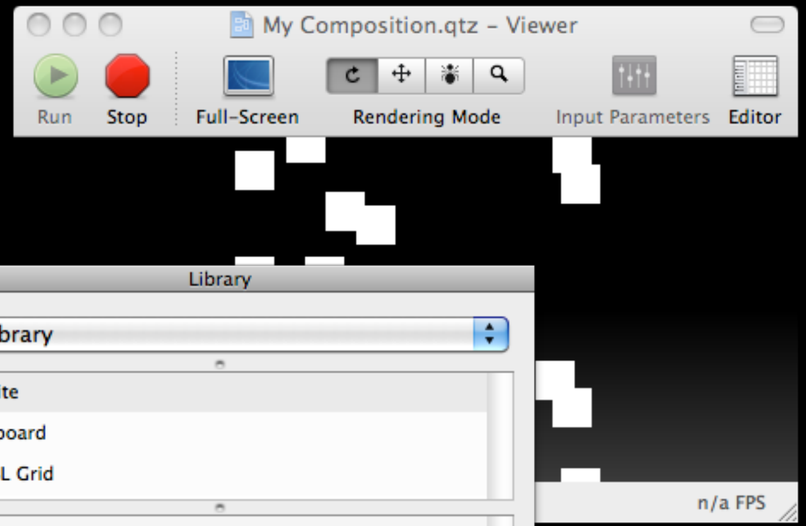
What You'll Learn

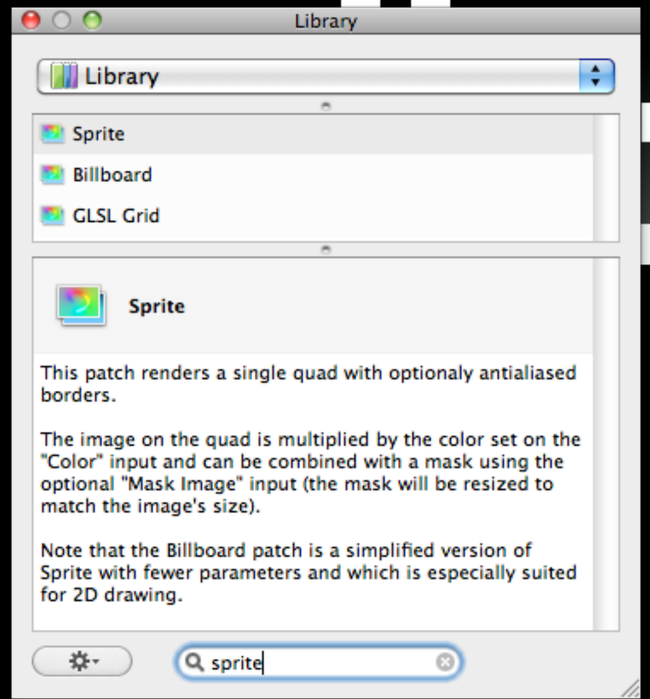
- Editor
- Performance
- OpenCL
- Geometry pipeline

Quartz Composer Editor

A new look



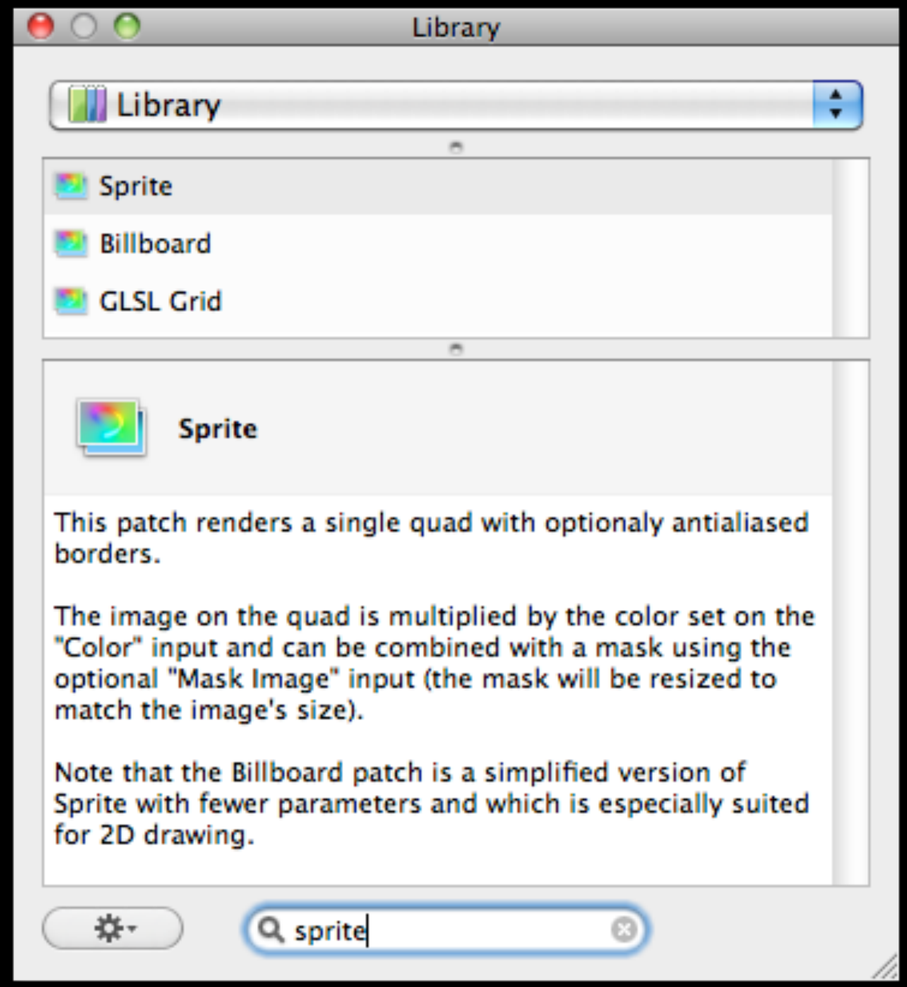




Quartz Composer Editor

The Patch Library

- Search
- Insert
- Custom groups
- Examples
- Manage Virtual Macros



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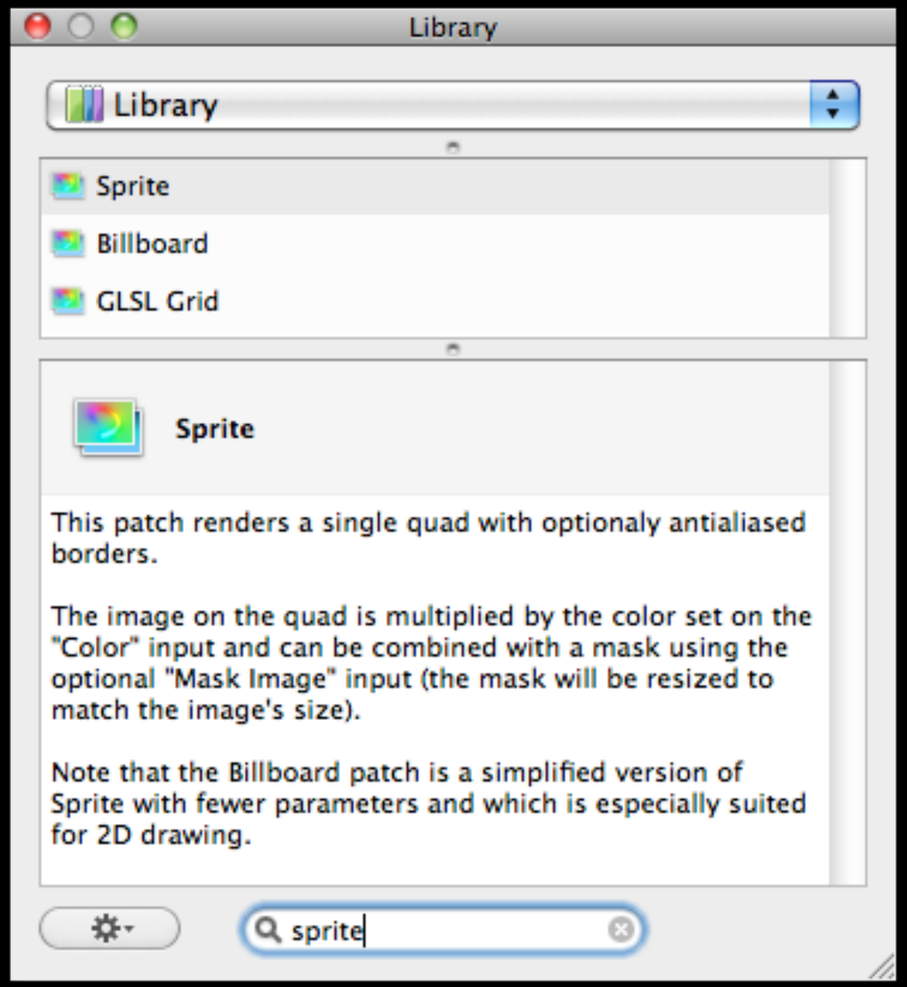

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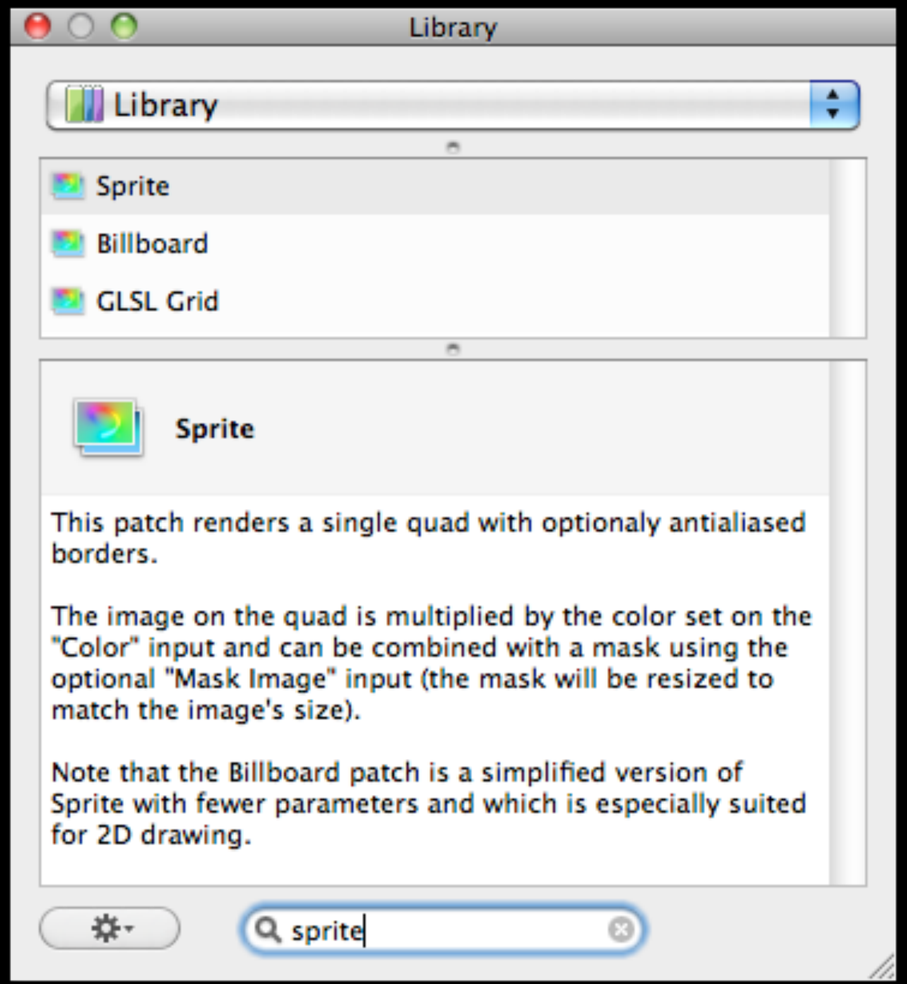

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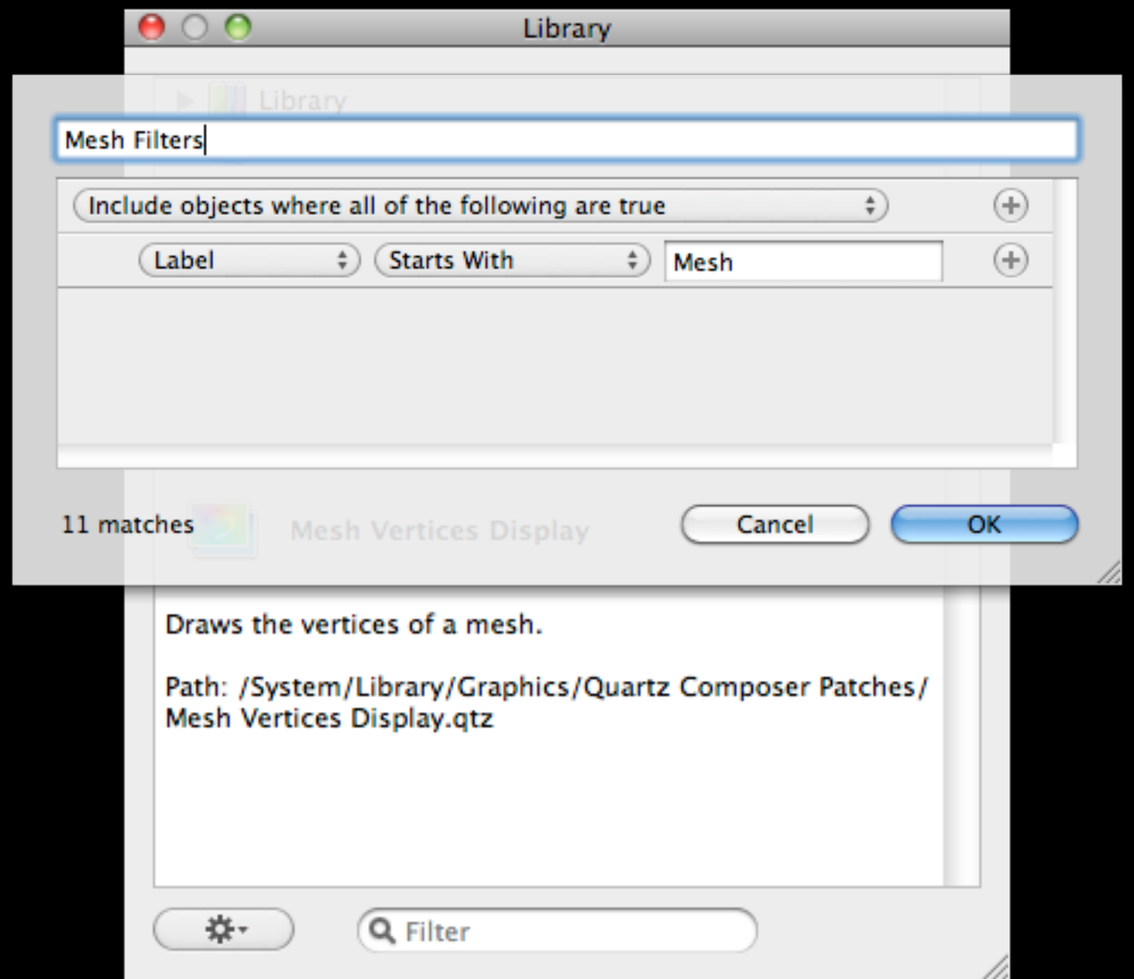

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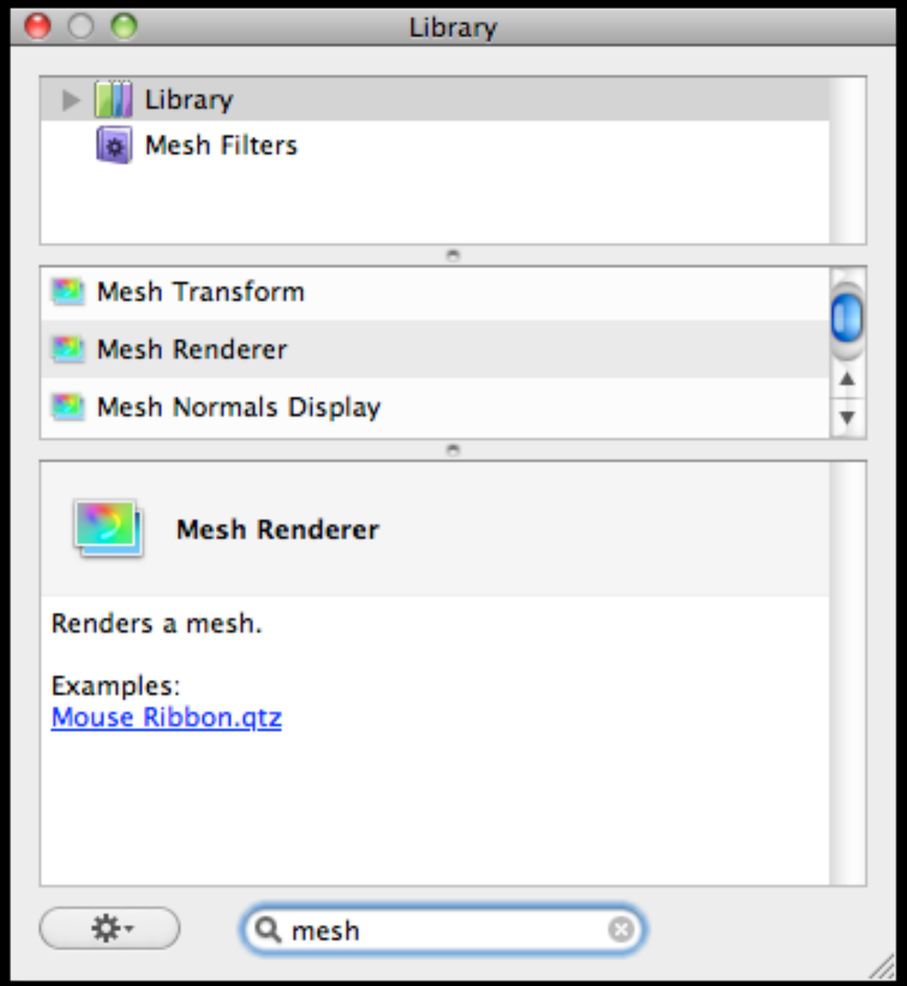

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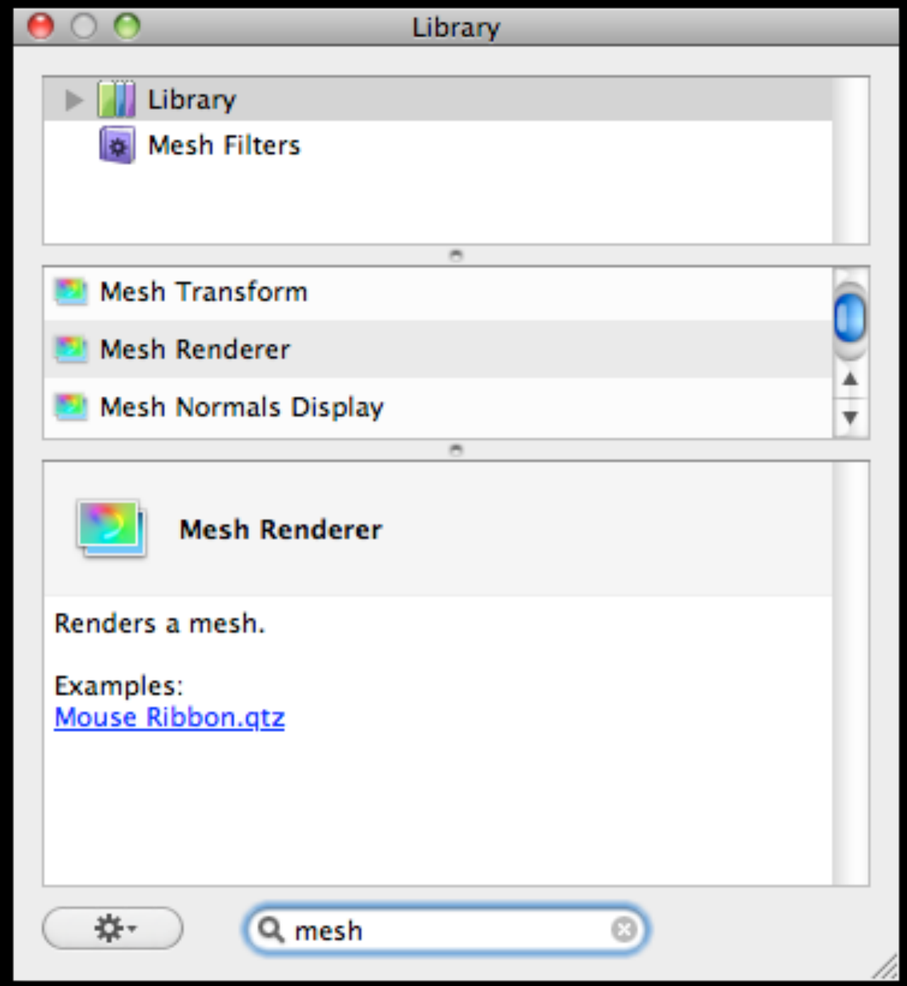


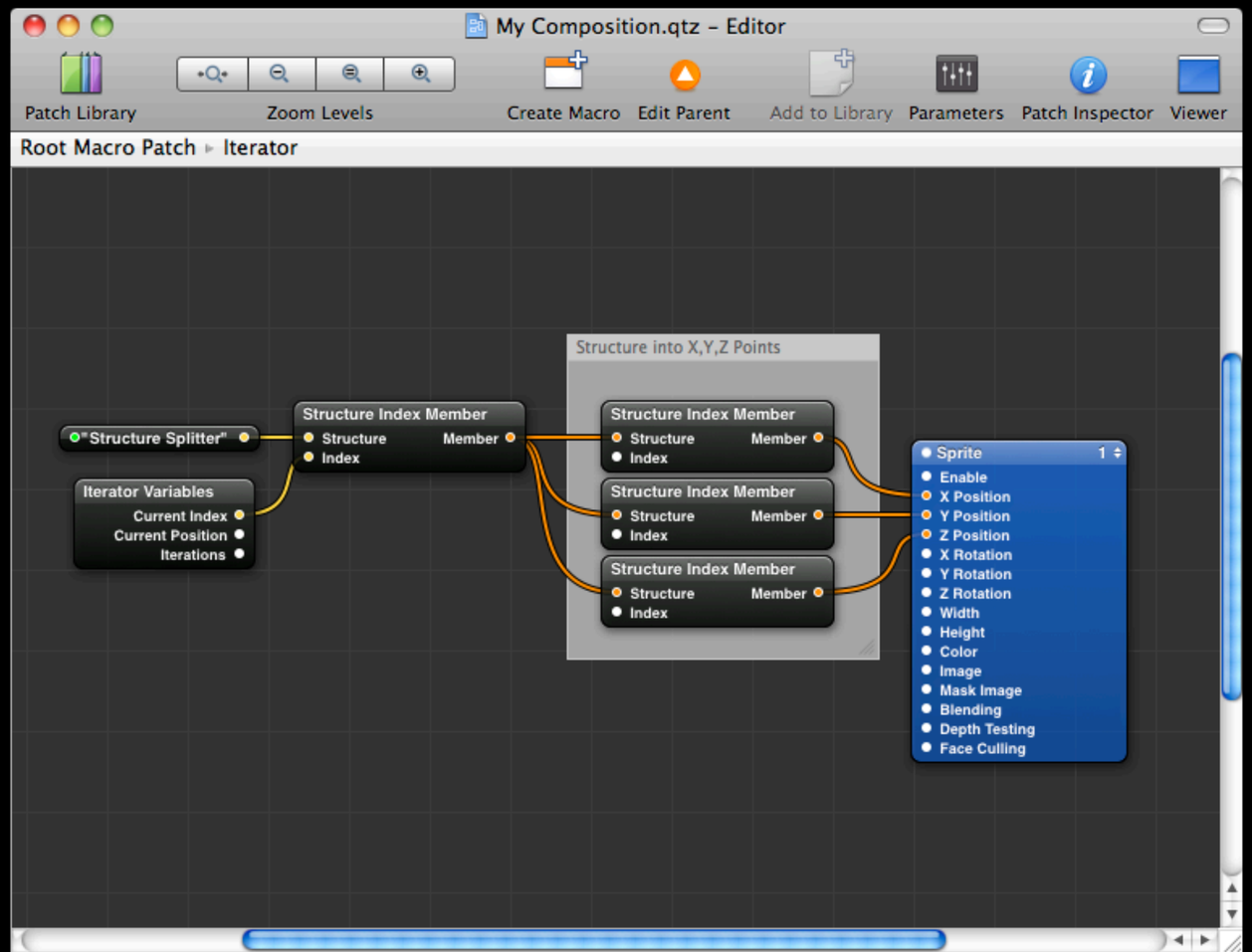
Virtual Macros

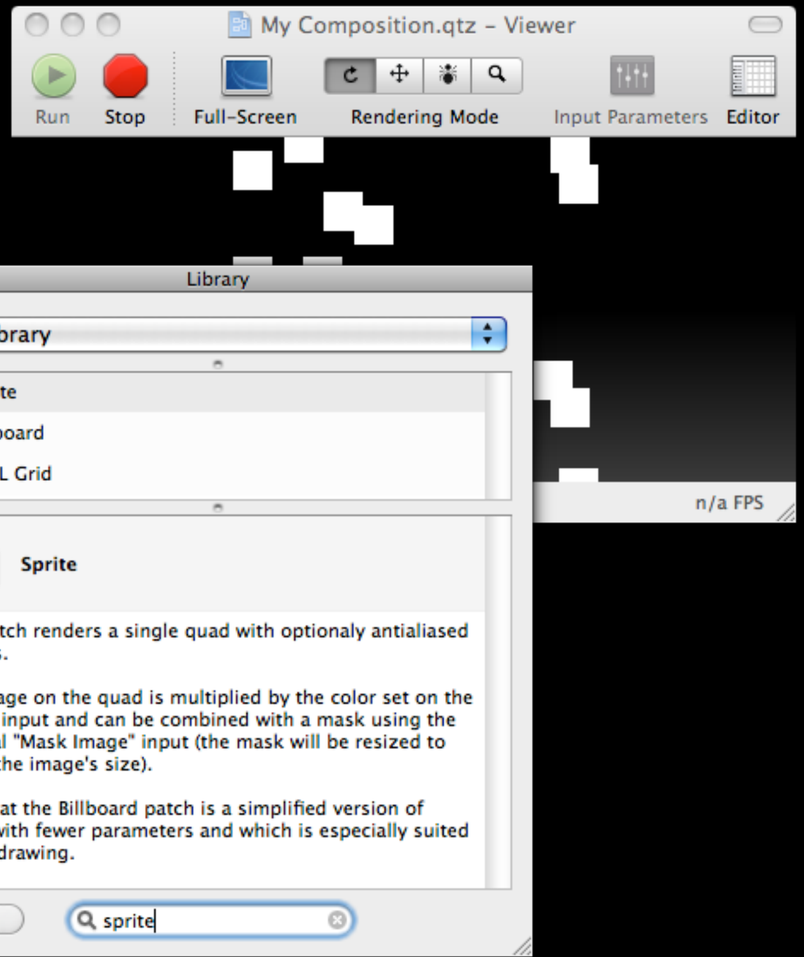
Management

- Create
- Edit
- Share
- Install

Quartz Composer Editor

Create Virtual Macros





Quartz Composer Editor

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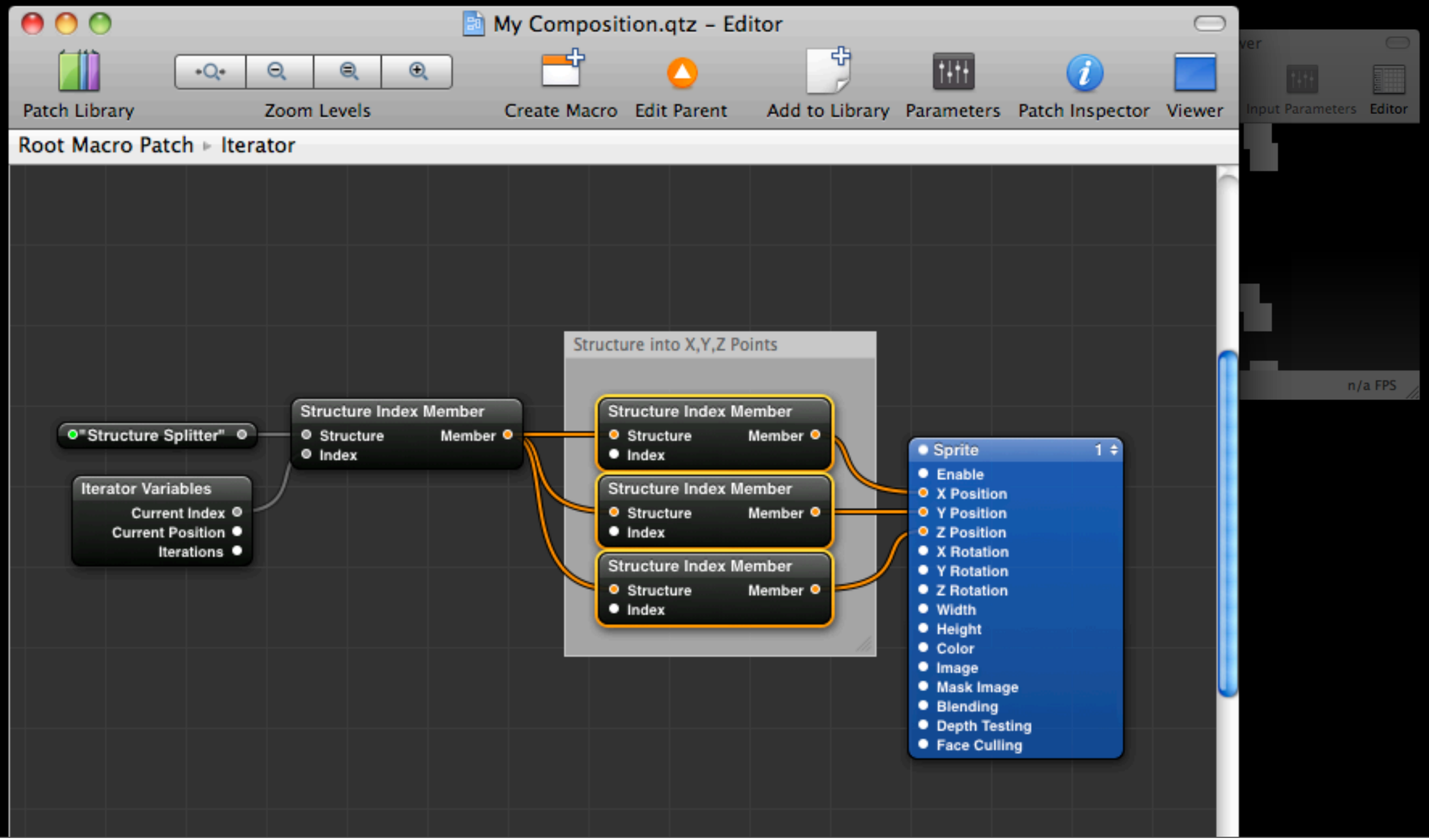

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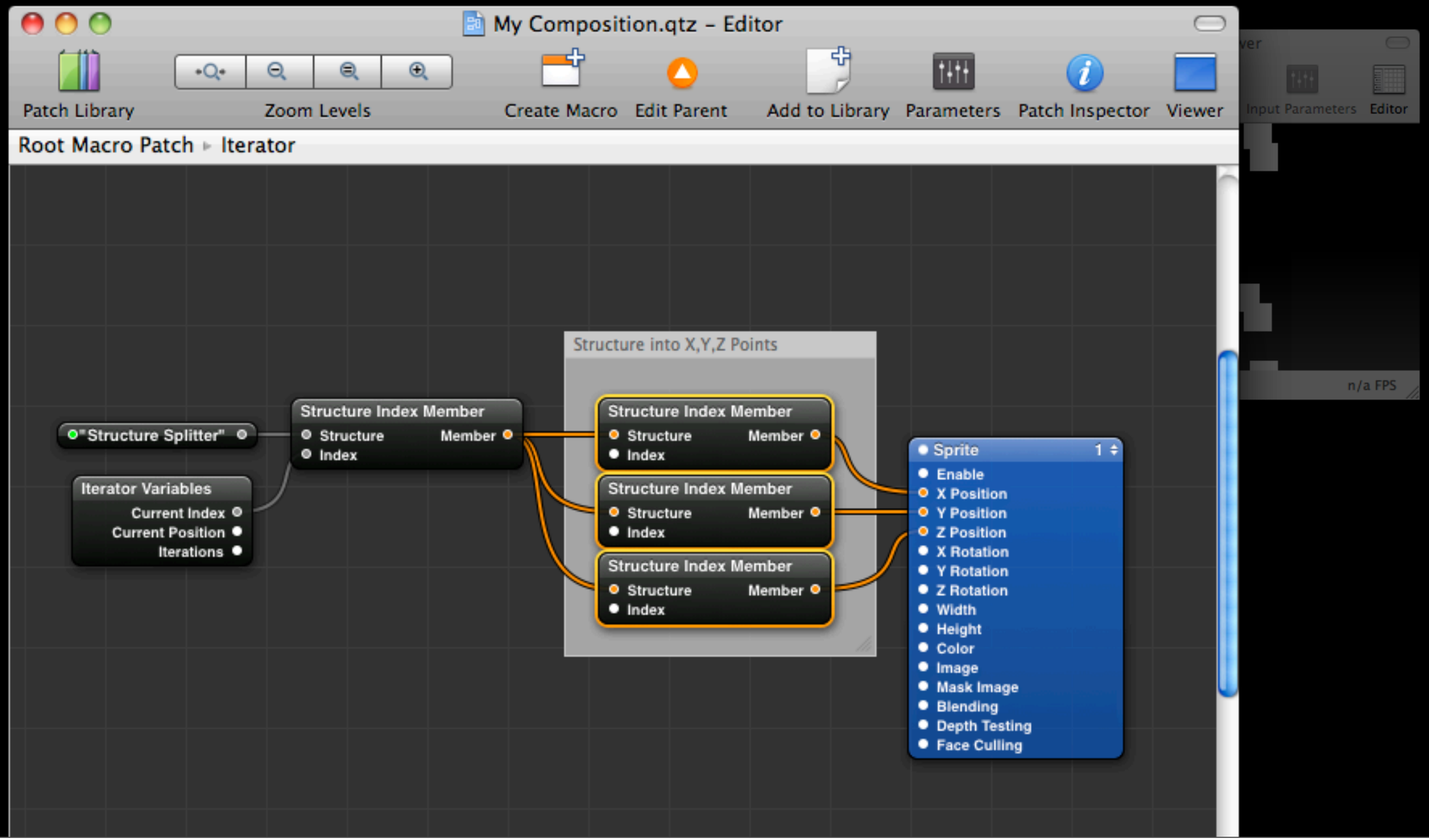

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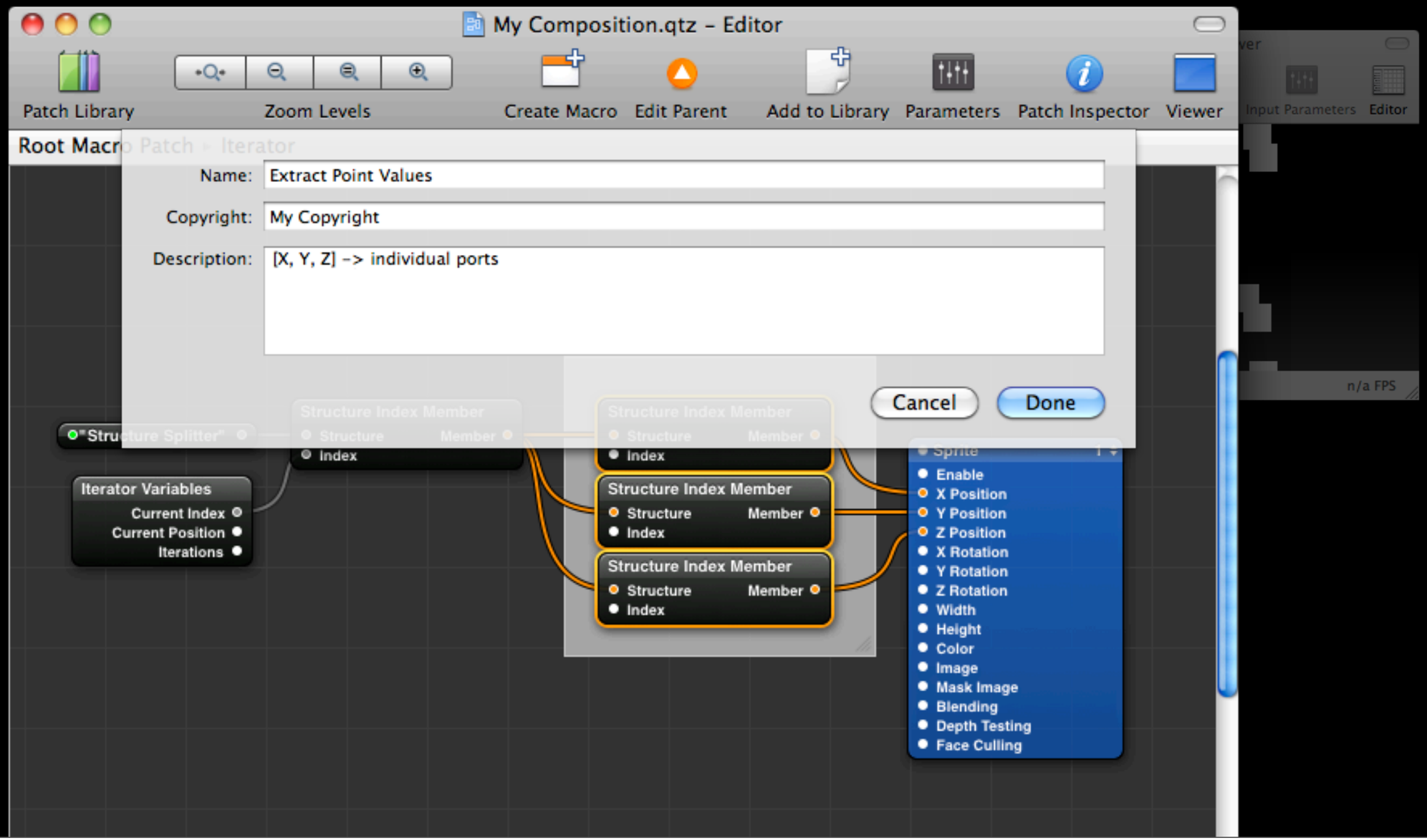

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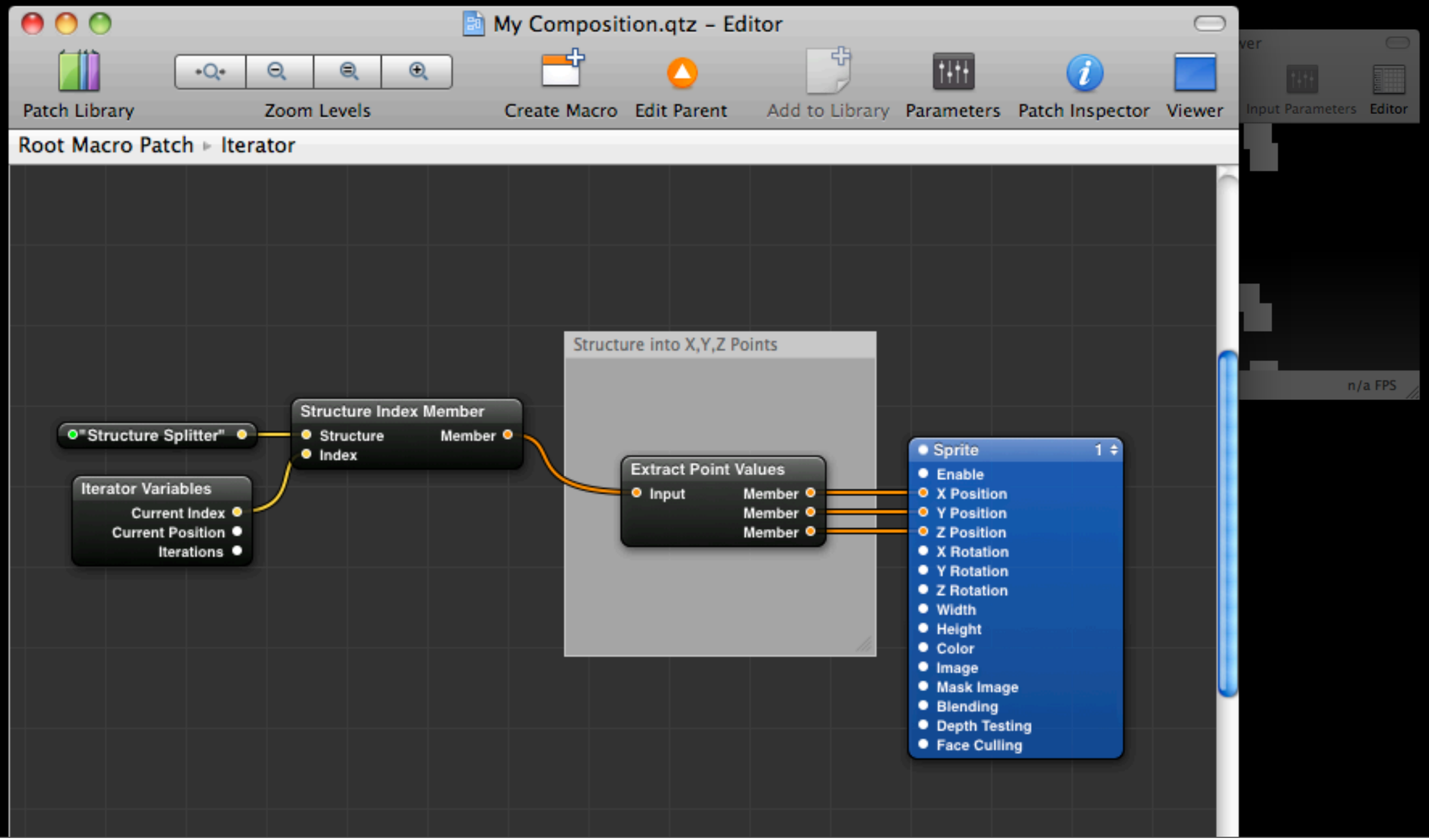

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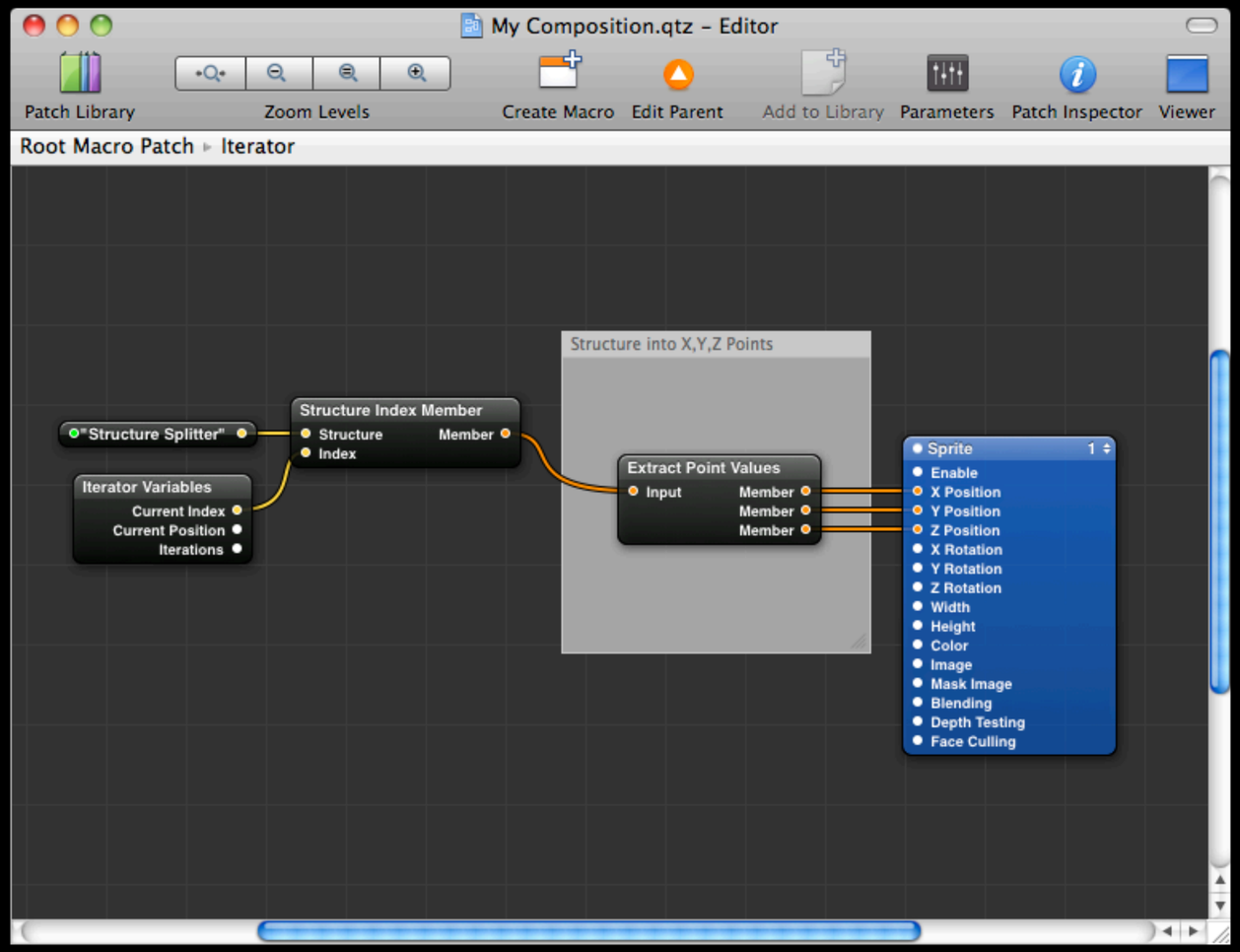

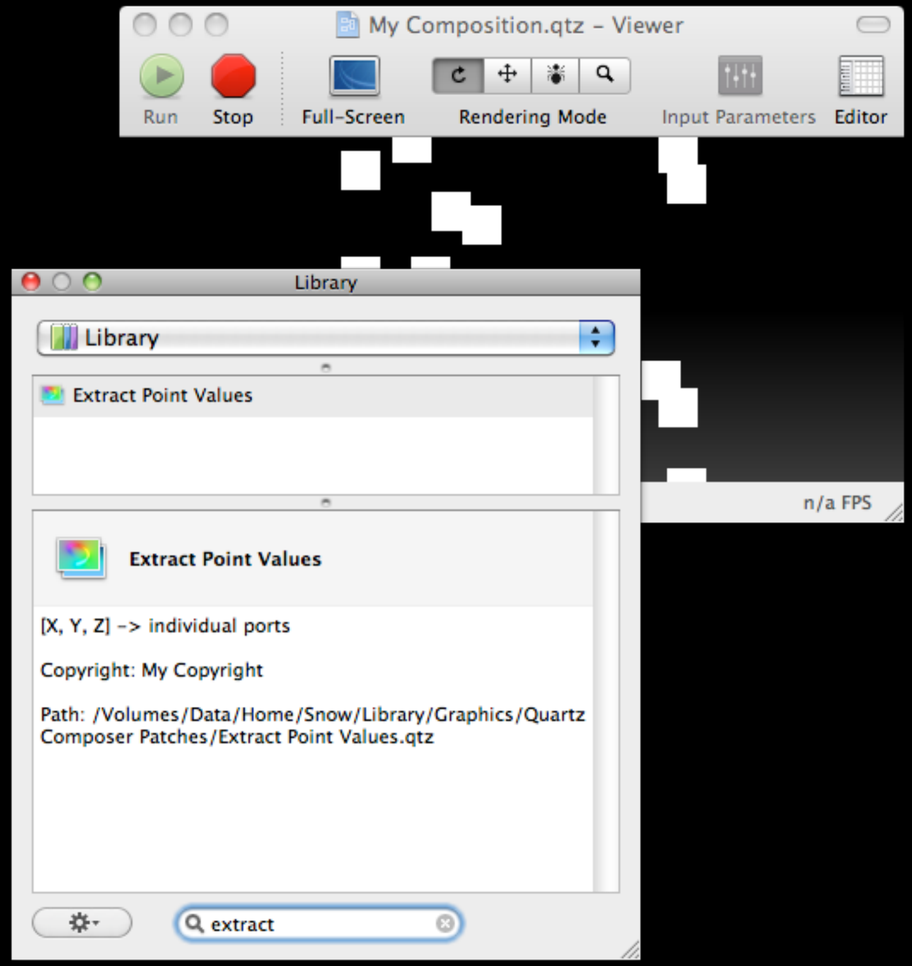

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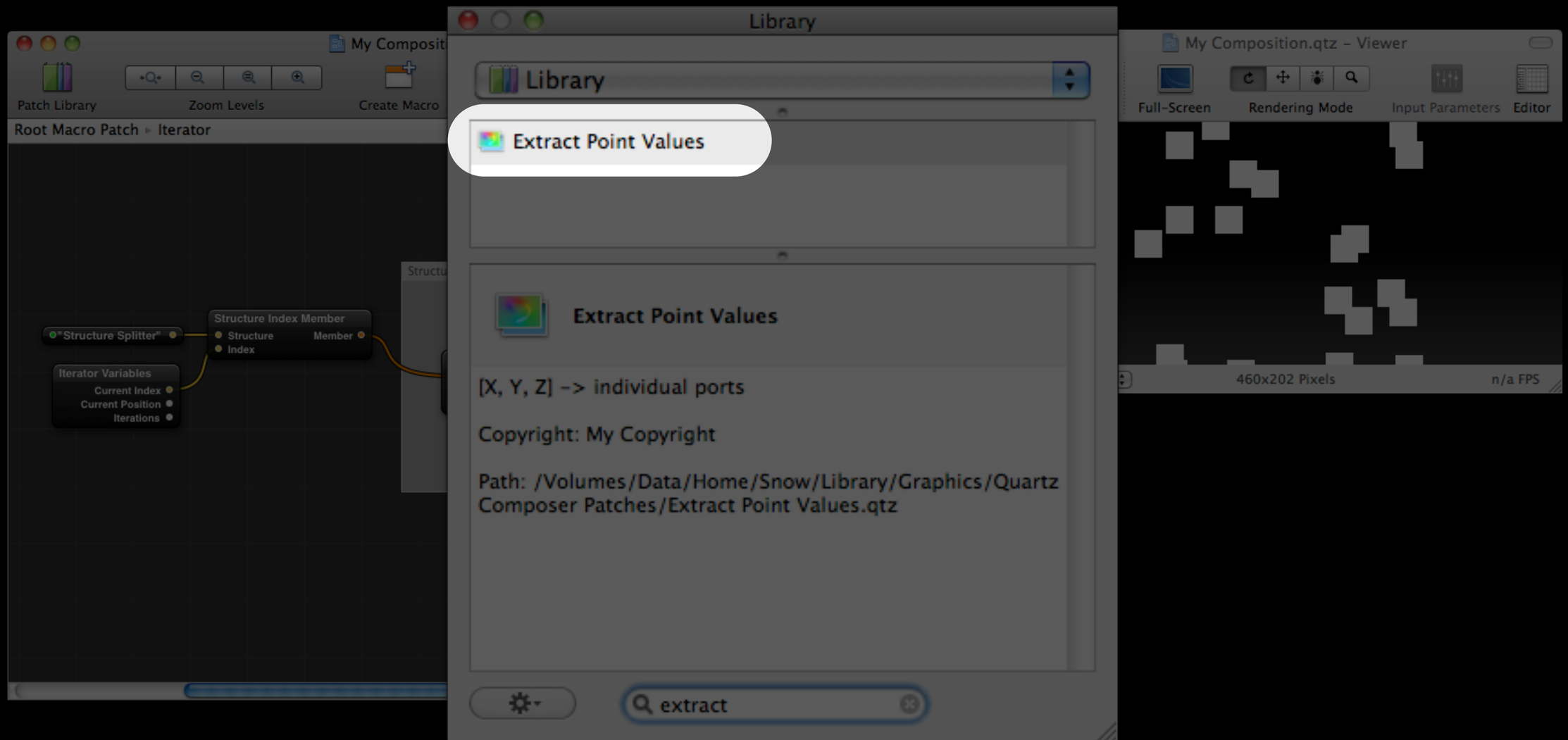
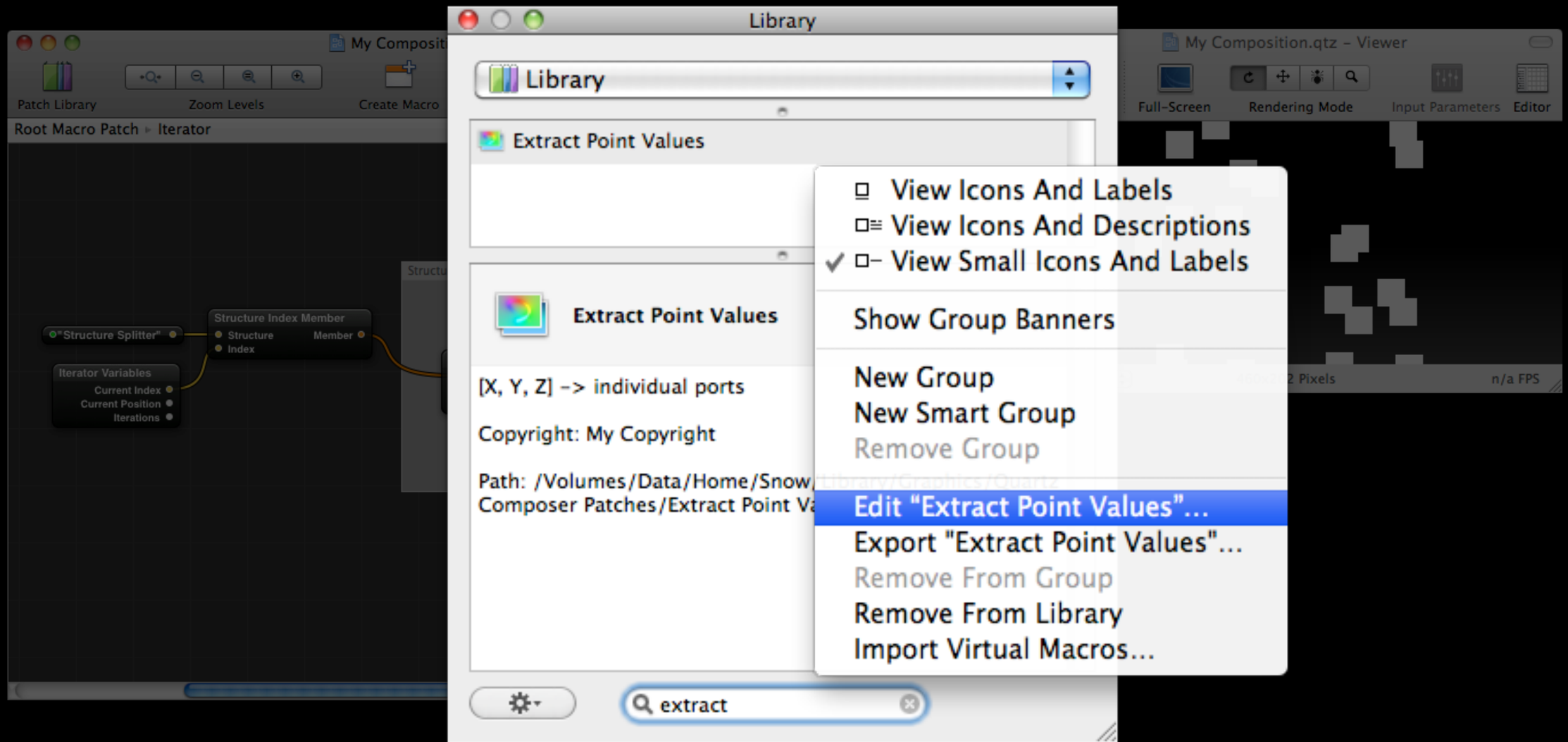


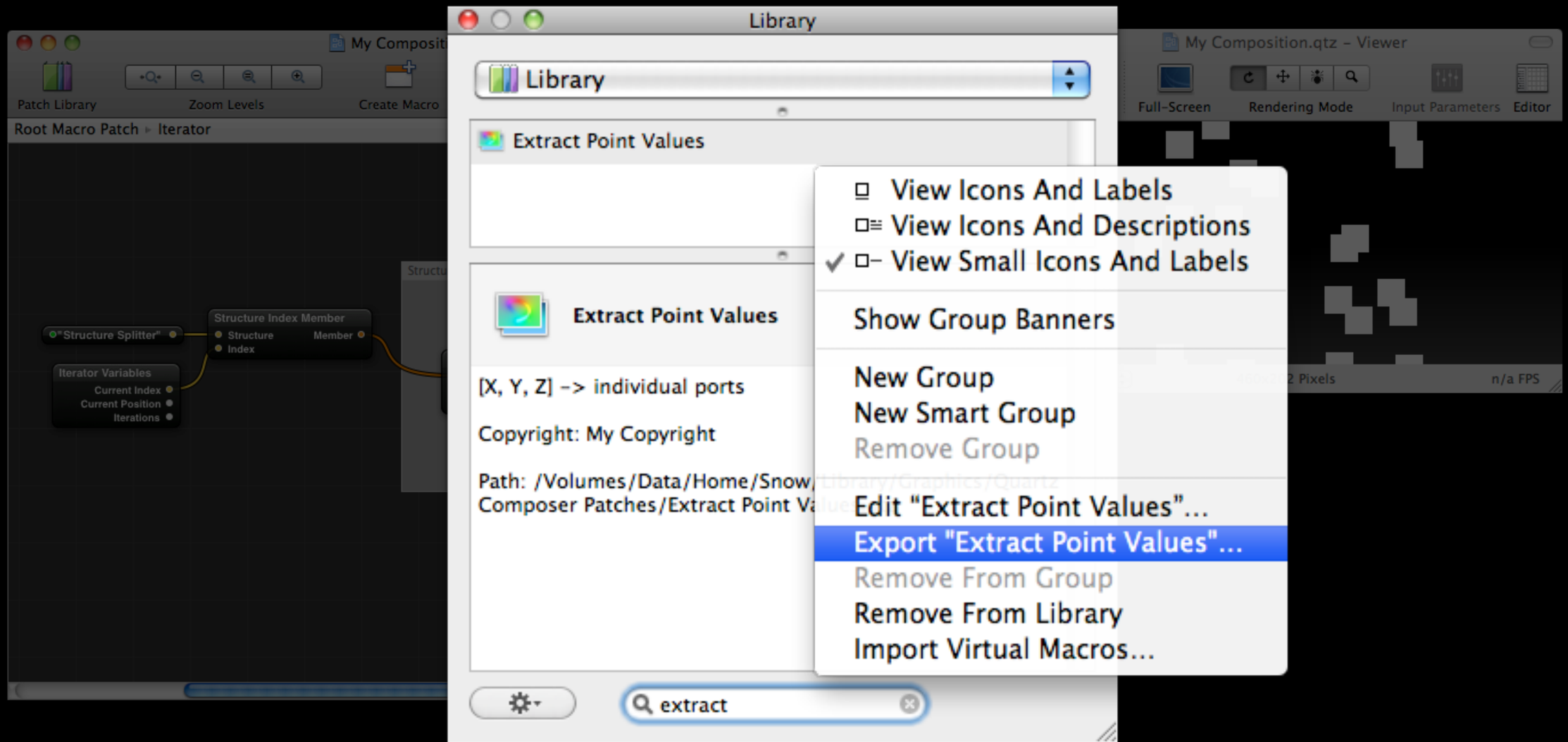
Quartz Composer Editor

Edit Virtual Macros



Quartz Composer Editor

Share Virtual Macros



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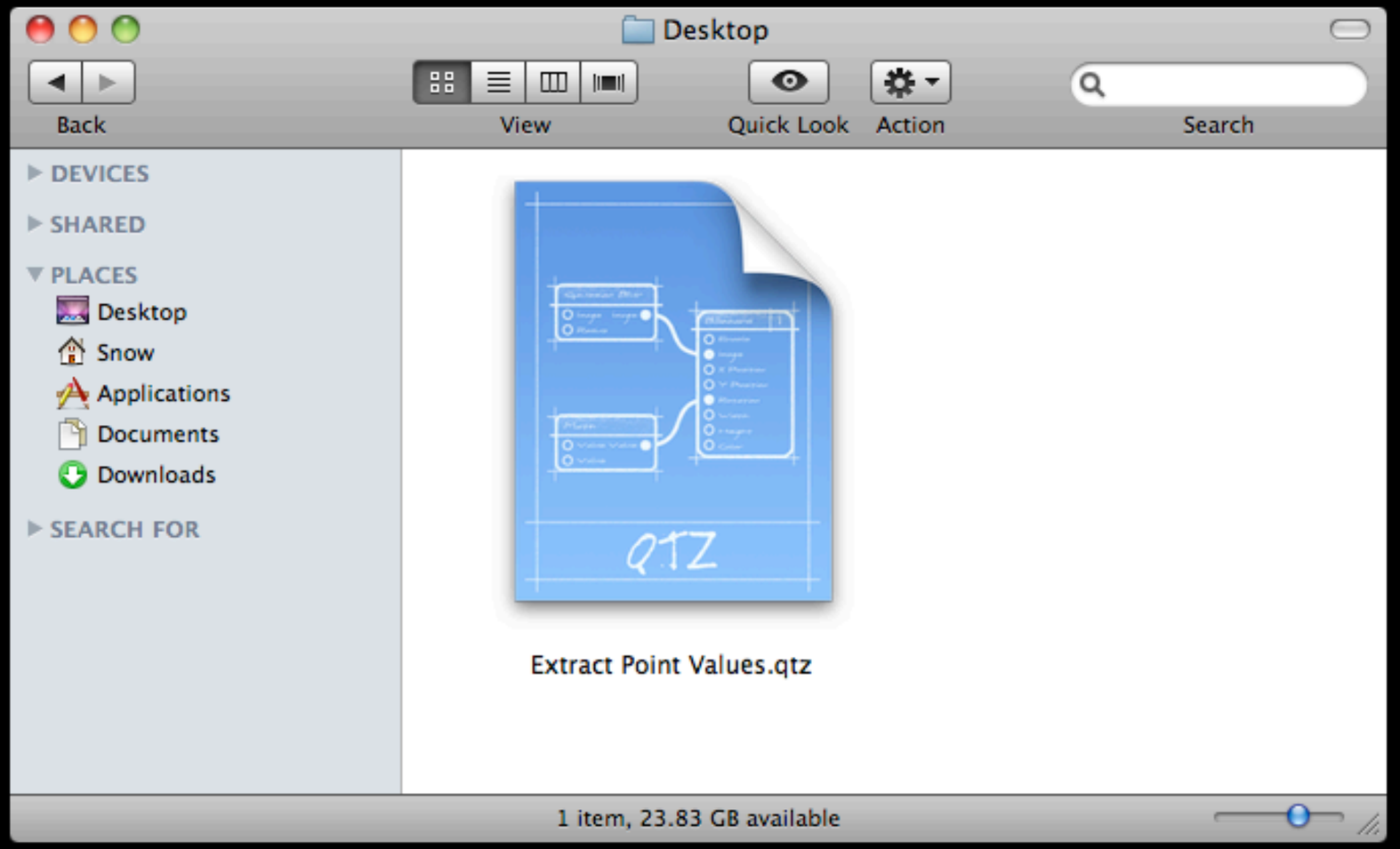
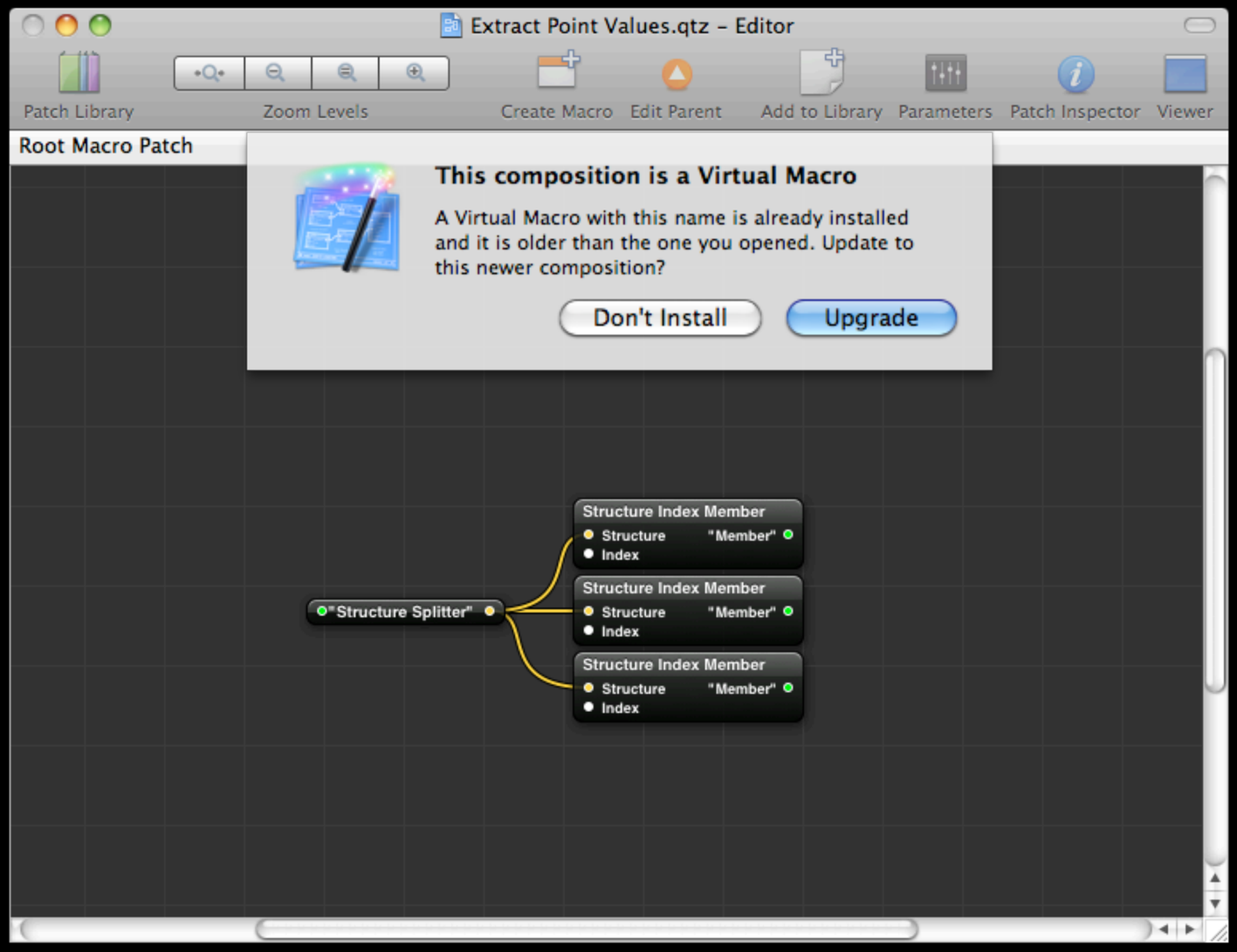


Quartz Composer Editor

Install Virtual Macros



Demo

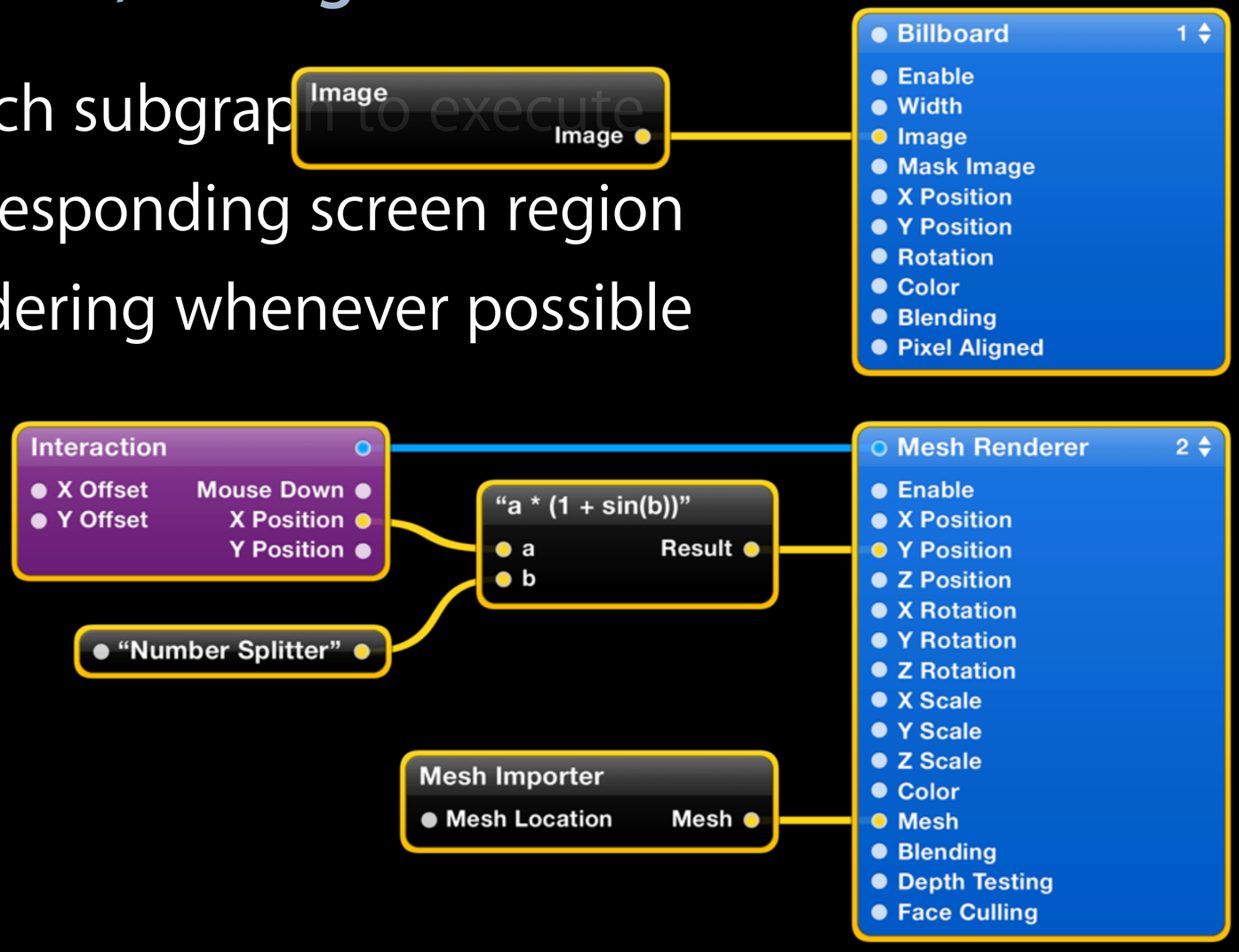
What You'll Learn

- Editor
- Performance
- OpenCL
- Geometry pipeline

Graph Execution

Better, faster, stronger

- Find which subgraph to execute
- Find corresponding screen region
- Skip rendering whenever possible



Performance Demo

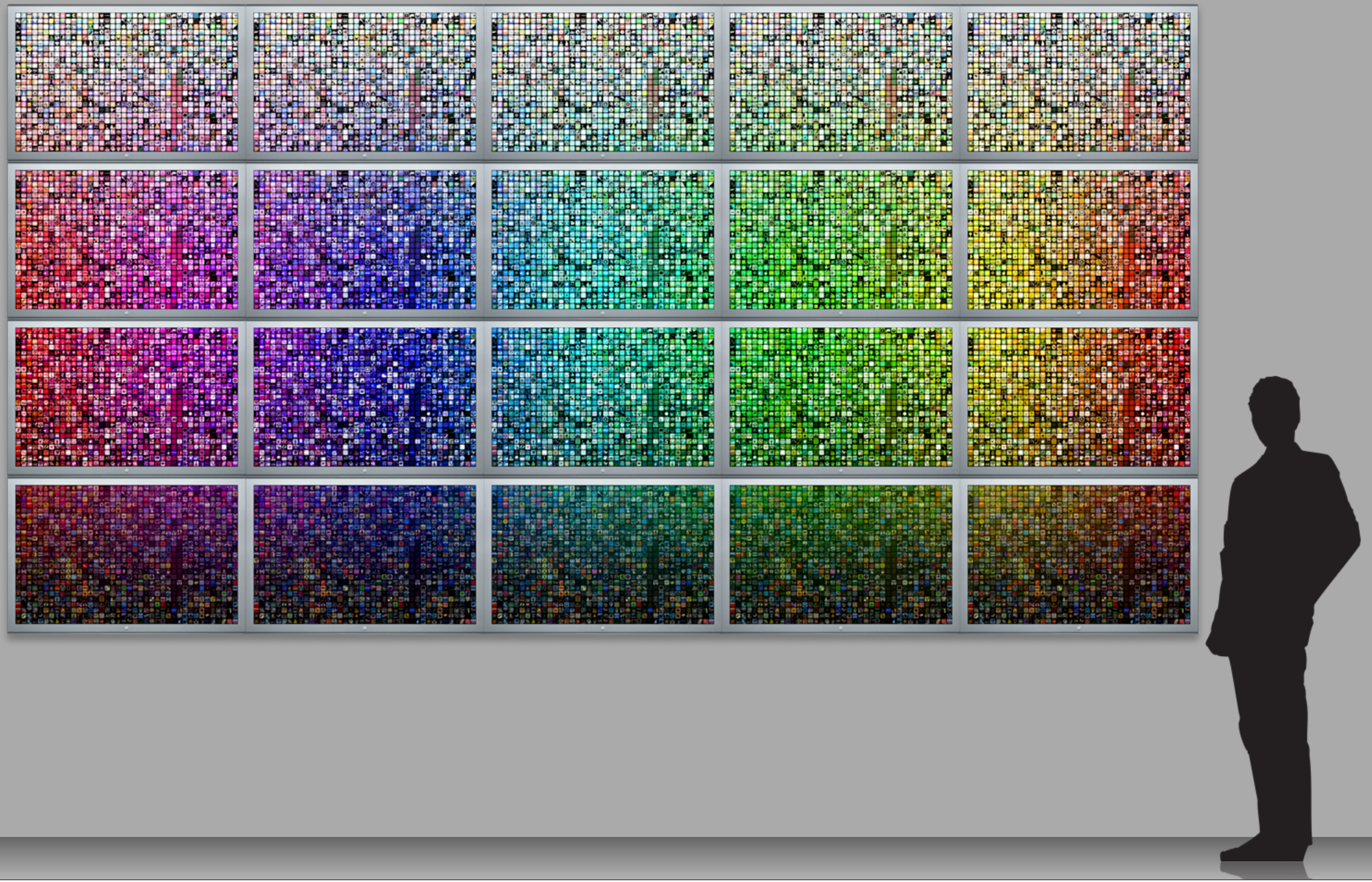
Performance Improvements

- Movie playback
- Iteration
- Garbage collection
- Multiple GPUs
- FBOs
- JavaScript

OpenCL and the Geometry Pipeline

Alessandro Sabatelli
Technical Artist

OpenCL



Demo

OpenCL Kernel Patch

- Resource management
- Thread and object dimension configuration
- Affine transforms, image colorspace and pixel format

OpenCL in Your Application

- From scratch
  - OpenCL Setup: Context, command queues, etc.
  - Attachments: OpenGL, CoreImage, Core Video, downloads etc.
  - Synchronization: GPUs, CPUs and Threads
  - Resource management
  - Thread and object configuration: Dimensions
  - Affine transforms, image colorspace and pixel formats
- Leveraging Quartz Composer
  - QCRenderer API

Geometry Pipeline

- 3D model import
- Procedural geometry
- Component accessors
- Applied transformations

Demo

OpenCL and the Geometry Pipeline

- Geometry import and creation
- OpenCL Kernel Patch
  - Geometry processing
  - Image processing
  - Data processing
- Render geometry
- Automatic conversions

Other Snow Leopard Features

You asked for it…

- Interaction
- Inertia and force physics
- Multitouch trackpad support
- 3D Sound Player patch
- New controls for Movie Player patch
- Iterator aware patches

More Information

Allan Schaffer
Graphics Technology Evangelist
aschaffer@apple.com

Related Sessions

Introduction to OpenCL	Marina Thursday 9:00AM
Harnessing the Power of OpenCL	Marina Thursday 10:30AM
Mastering OpenCL	Marina Thursday 2:00PM
Image Processing and Effects with Core Image	Marina Friday 9:00AM
Deploying Podcast Producer	Mission Friday 9:00AM

Labs

Quartz Composer Lab	Graphics and Media Lab A Thursday 3:30PM
OpenCL Lab	Graphics and Media Lab B Thursday 3:30PM
Core Image Lab	Graphics and Media Lab B Friday 10:30AM

Summary

- Editor improvements
- Performance
- OpenCL
- Geometry pipeline

Q&A

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developer.apple.com/wwdc/attendee

WWDC09